

### REMARKS

Claims 21-32 are pending. Claims 1-20 have been cancelled. Claim 21 has been amended. Reconsideration of the claims in light of the remarks presented below is respectfully requested.

With respect to all amendments and canceled claims, Applicants have not dedicated or abandoned any unclaimed subject matter and moreover have not acquiesced to any rejections and/or objections made by the Patent Office. Applicants reserve the right to pursue prosecution of any presently excluded claim embodiments in future continuation and/or divisional applications.

#### **Claim Amendment**

Claim 21 has been amended. The support is found in page 14, lines 11-13 and Fig. 4B, page 23, line 31 to page 24, line 1, and page 32, line 25 to page 33 line 2.

#### **Claim Rejections under 35 U.S.C. § 112, first paragraph**

Claims 21-32 stand rejected under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. The Examiner admits that the specification describes 2' or 3' modified nucleotide triphosphates and deoxyribonucleoside triphosphates. However, the Examiner states that the specification does not adequately describe a nucleotide triphosphate comprising a covalently attached transition metal complex as recited in claims 21-32. Applicants respectfully disagree.

To satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). MPEP § 2163.02.

The Applicants respectfully submit that the specification describes a nucleotide triphosphate comprising a covalently attached transition metal complex as recited in claims 21-32.

1. The specification has described the claimed invention with all of its limitations with words, structures, and figures.

Claims 22-26 depends on claim 21, which requires:

A nucleotide triphosphate comprising a covalently attached electron transfer moiety comprising a transition metal and at least one ligand.

Claims 28-32 depends on claim 21, which requires:

- a) providing a nucleotide comprising a covalently attached electron transfer moiety comprising a transition metal and at least one ligand;
- b) converting said nucleotide into a modified nucleotide triphosphate; and
- c) incorporating said modified nucleotide triphosphate in a synthetic reaction to form a nucleic acid with a covalently attached electron transfer moiety.

The Applicants respectfully submit that the specification describes nucleotide triphosphates with covalently attached ETMs. As the Examiner admits, the specification teaches 2' or 3' modified nucleotide triphosphates. The Applicants respectfully point out that the "modification" at the 2' or 3' position is in fact the covalent attachment of an ETM. For example, Figures 4A and B show nucleosides with covalently attached (e.g. 2' or 3' modified) ETMs. The specification then describes using these nucleosides to form nucleotide triphosphates. See for example page 21, lines 29 - 33: "the amino modified nucleotides made as described above are converted to the 2' or 3' modified nucleotide triphosphate from using standard biochemical methods", citing Fraser. The applicants submit that the conversion of ETM modified nucleosides to triphosphate form is described in the specification, and the reaction to take nucleosides and add the triphosphate group was well known in the art, including modified nucleosides.

Because the specification describes the claimed invention with all of its limitations using descriptive means as words, structures, and figures that fully set forth the claimed invention, Applicants have shown possession of the claimed invention.

**2. The Examiner has not met the burden to rebut the presumption of adequate written description.**

As the Examiner is aware, under M.P.E.P. § 2163.04 a written “description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).” M.P.E.P. § 2163.04 I goes on to state that “the Examiner must set forth express findings of fact which support the lack of written description conclusion . . . [including] reasons why a person skilled in the art would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed.” (Emphasis added).

The Examiner cites page 21 of the specification to support the assertion that the description does not adequately describe the limitation required by claim 1, citing Applicant’s Response and Amendment (mailed June 29) in response to previous Office Action (mailed April 21, 2005). However, in that response Applicants cite certain parts of page 21 only as exemplary description. There are additional disclosures in the specification regarding the claimed invention, such as those listed above, which the Examiner overlooks. Contrary to the Examiner’s assertion, the specification, does describe all the limitations required by claims 21 and 27.

Because the specification describes the claimed invention with all of its limitations using descriptive means as words, structures, and figures that fully set forth the claimed invention, Applicants have shown possession of the claimed invention. Moreover, the Examiner has not met his burden to rebut the presumption of adequate written description. Therefore, Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

**Claim Rejections under 35 U.S.C. § 102(b)**

Claim 21 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Sigel *et al.*, (Inorg. Chem., 26, 2149-2157, 1987) (“*Sigel*”). Applicants respectfully traverse the rejection.

For an anticipation rejection under 35 U.S.C. § 102 to be proper, a single reference must disclose each and every element of a claim. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single

prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

**1. *Sigel* does not teach “one ligand” as claim 21 required.**

Claim 21 requires:

A nucleotide triphosphate comprising a covalently attached electron transfer moiety comprising a transition metal and at least one ligand.

*Sigel* teaches monomeric metal ion complexes formed with NTPs, with the structure of  $M(NTP)^{2-}$ . See page 2149, title, and page 2153, left column. The metal is attached to the NTP through the phosphate of the NTP, which is attached to the ribose of the NTP. See page 2153, left column, equation 7. However, in such a structure, the metal ion is attached to the NTP through the phosphate, which is part of the NTP. There is not “one ligand” as claim 21 required. As such, *Sigel* does not teach “electron transfer moiety comprising a transitional metal and at least one ligand” as claim 21 required.

As *Sigel* fails to disclose each element of the present invention, it cannot anticipate the presently claimed invention. Accordingly, Applicants respectfully request withdrawal of this rejection.

CONCLUSION

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Applicants submit that the claims are now in condition for allowance and early notification to that effect is respectfully requested. Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,  
DORSEY & WHITNEY LLP

Dated: \_\_\_\_\_

1/20/05  
Customer Number: 32940  
555 California Street, Suite 1000  
San Francisco, CA 94104-1513  
Telephone: (415) 781-1989  
Facsimile: (415) 398-3249

BY: \_\_\_\_\_

Jeffery P. Bernhardt  
Jeffery P. Bernhardt, Reg. No. 54,997  
for Robin Silva, Reg. No. 38,304  
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